

Appln No. 09/834,984

Amdt date March 4, 2004

Reply to Office action of October 4, 2003

REMARKS/ARGUMENTS

In the Office action dated October 4, 2003, the Examiner rejected claims 1, 3, 6, 8, 9, 11 and 12 under 35 U.S.C. § 102 and rejected claim 10 under 35 U.S.C. § 103. Claims 2, 4, 5 and 7 were objected to as being dependent upon a rejected base claim, but were deemed allowable if rewritten in independent form including all limitations of the base claim and any intervening claims.

By this Amendment, Applicant has amended claims 3 and 12 and added new claims 13 - 19. Reconsideration and reexamination are hereby requested for claims 1 - 19 that are now pending in this application.

Amendments to the Claims

Claim 3 has been amended to correct a typographical error.

Independent claim 12 has been amended to more clearly define the claimed amplifier structure.

New claims 13 - 15 depend on claim 12.

Applicant has rewritten claims 2 and 4 in independent form as new claims 16 and 18, respectively. Applicant has rewritten claims 5 and 7 as claims 19 and 17, respectively. Claims 19 and 17 depend on new claims 18 and 16, respectively. Applicant submits that these claims are now allowable in accordance with the Examiner's assessment in the Office action.

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Response to the Rejection of the Claims Under 35 U.S.C. § 102

The Examiner rejected claims 1, 3, 6, 8, 9, 11 and 12 under 35 U.S.C. § 102(b) as being unpatentable over Mizrahi, U.S. Patent No. 5,812,306. Claims 1 and 12 are independent.

Applicant respectfully submits that Mizrahi does not disclose all of the limitations of claims 1 and 12. Each of these claims will be discussed in turn.

Independent Claim 1

Claim 1 recites, in part:

An optical network hub structure comprising:

a WDM unit arranged in line with a fibre trunk .

. . .

at least one amplifier structure disposed in line on the fibre trunk at each side of the WDM unit . . . ,

. . .

whereby at each side of the WDM unit the optical network signal is, in use, uni-directionally amplified.

In contrast, Mizrahi discloses a single amplifier structure 70 disposed in-line between two network hubs. The single amplifier structure amplifies signals traveling in both directions between the hubs. That is, the single structure amplifies bi-directionally. See, for example, Mizrahi at column 7, lines 32 - 60.

Thus, Mizrahi does not disclose an "optical network hub structure" that comprises "at least one amplifier structure disposed in line on the fibre trunk at each side of the WDM

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unit." Moreover, Mizrahi does not disclose that "at each side of the WDM unit the optical network signal is, in use, unidirectionally amplified." Accordingly, the invention of claim 1 is not anticipated by Mizrahi.

Moreover, the invention of claim 1 would not have been obvious to a person of ordinary skill in the art in view of Mizrahi. First, Mizrahi says nothing that would suggest the above cited structure of claim 1. Second, the invention of claim 1 may solve problems and provide advantages that were not taught or suggested by the cited prior art. For example, the structure of claim 1 may be used to advantageously provide a system that "comprises gain in only one direction" with the potential result that "the possibility of parasitic lasing occurring may be very remote compared to a bi-directional amplifying structure." See, Applicant's Specification at page 7. Accordingly, Applicant respectfully submits that the invention of claim 1 is patentable over Mizrahi.

Independent Claim 12

Claim 12 recites:

An in-line optical amplifier structure for an optical transmission line, the amplifier structure comprising:

- at least two propagation dependent optical junction elements,
- at least two optical paths optically connected in parallel between the two junction elements, and
- an amplifier in only one of the optical paths, amplifying only blocks of a bi-directional,

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multiplexed optical signal having the same propagation direction on the optical transmission line.

As discussed above, the amplifier 78 disclosed in Mizrahi amplifies optical signals traveling in both directions between the network nodes.

Mizrahi does not disclose an "in-line optical amplifier structure for an optical transmission line" where "an amplifier in only one of the optical paths" amplifies "only blocks of a bi-directional, multiplexed optical signal having the same propagation direction on the optical transmission line." Accordingly, the invention of claim 12 is not anticipated by Mizrahi.

Moreover, the invention of claim 12 would not have been obvious to a person of ordinary skill in the art in view of Mizrahi. First, Mizrahi says nothing that would suggest the above cited structure of claim 12. Second, for reasons similar to those discussed above in conjunction with claim 1, the invention of claim 12 may solve problems and provide advantages that were not taught or suggested by the cited prior art. Accordingly, Applicant respectfully submits that the invention of claim 12 is patentable over Mizrahi.

Claims 2 - 11 that depend on claim 1 and claims 13 - 15 that depend on claim 12 also are patentable over the cited references for the reasons set forth above. In addition, these dependent claims are patentable over these references for the additional limitations that the dependent claims contain.

For example, claim 13 recites, in part: "the propagation dependent optical junction elements are wavelength independent."

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In contrast, the amplifier structure disclosed in Mizrahi includes, as crucial elements, grating structures, e.g., 76 in Figure 1. As a result, the amplifier structure of Mizrahi has wavelength dependent directional characteristics, which may severely limit the reconfiguration capabilities of the structure.

Response to the Rejection of Claim 10 Under 35 U.S.C. § 103

The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Mizrahi.

As discussed above, Applicant submits that claim 1 upon which claim 10 depends is not obvious in view of Mizrahi. Accordingly, Applicant submits that claim 10 is patentable over Mizrahi for at least the reasons stated for claim 1 and because of the additional limitations that claim 10 contains.

SUMMARY

In view of the above amendment and remarks it is submitted that the claims are patentably distinct over the cited references and that all the rejections to the claims have been overcome. Reconsideration and reexamination of the above Application is requested.

Respectfully submitted,

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